**Assessing the impact of water availability on growth of neotropical trees**

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Climate modeling scenarios predict deep changes of the rainfall regime in Amazonia for the next century. The expected increase in dry season length would lead to less water availability for trees.

Every month during 3 years, growth measurement was recorded for more than 200 neotropical trees. Tree daily water availability during this period was simulated making use of a soil water balance model. Using a bayesian modeling framework, we analysed (i) the effect of water availability on tree growth and (ii) how functional trait modulated tree responses to drought.

For most studied species, tree growth was deeply affected by seasonal water availability. Trees exhibited different water stress sensibilities linked to diffeent functional strategies, from a decrease to a stop in radial stem growth during the drought season. Largest increments were observe at the beginning of the rain season. The remaining part of unexplained variance, may be attributed to ressources competition, indiviual phenology, particular history or genetic.

Our results suggest that the intensity of the annual dry season have a large impact on annual tree growth. If rainfall reduction is confirmed in the next decades, tree growth, and hence the whole forest dynamic, will undoubtely be modified.